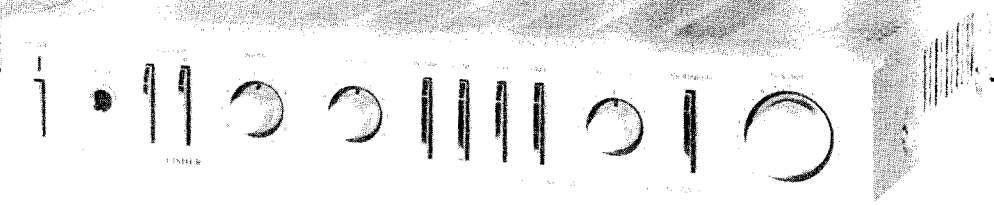
SERVICE MANUAL

FISHER

CA-M300

Stereo Pre-Main Amplifier

(EUROPE)



The first name in high fidelity

SPECIFICATIONS

AMPLIFIER	CA-M300
Sine Wave Power	
at 1,000 Hz (8 ohms)	2 x 23 W
20 to 20,000 Hz (8 ohms)	2 x 20 W
Music Power	
(8 ohms)	2 x 35 W
THD (rated output)	0.05 %
IM (rated output)	0.05 %
Power Bandwidth	20 Hz – 20 kHz
Frequency Response (20 Hz – 20 kHz)	±0.5 dB
Damping Factor (8 ohms)	40
Imput Sensitivity and Impedance	
Phono	2.5 mV/100 kohms
Tape Monitor	150 mV/40 kohms
Tuner	150 mV/40 kohms
Auxiliary	150 mV/40 kohms
S/N Ratio (DIN)	
Phono (10 mV Input)	85 dB
Tape/Tuner/Aux	95 dB
Treble Control (10 kHz)	±10 dB
Bass Control (100 Hz)	±10 dB
Loudness Control (100 Hz/10 kHz)	+8 dB/+4 dB
Power Requirements	AC: 110/220 V, 50 Hz
Power Consumption	110 W
Dimensions (W x D x H)	298 x 215 x 51.5 mm
Weight (approx.)	3.3 kg

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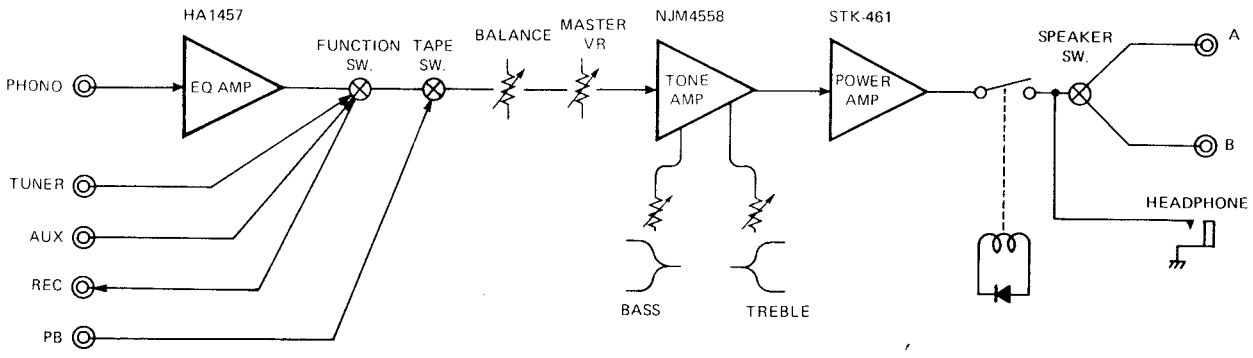
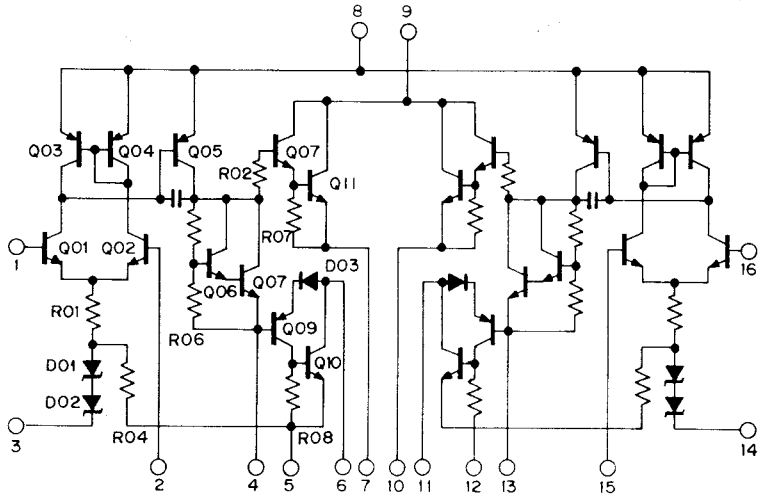
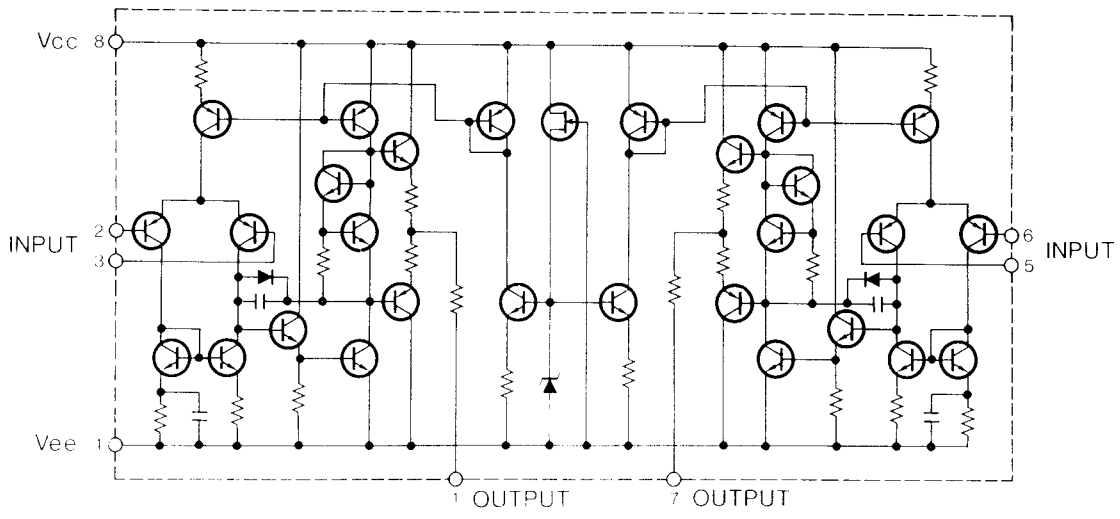
FUNCTIONAL BLOCK DIAGRAM



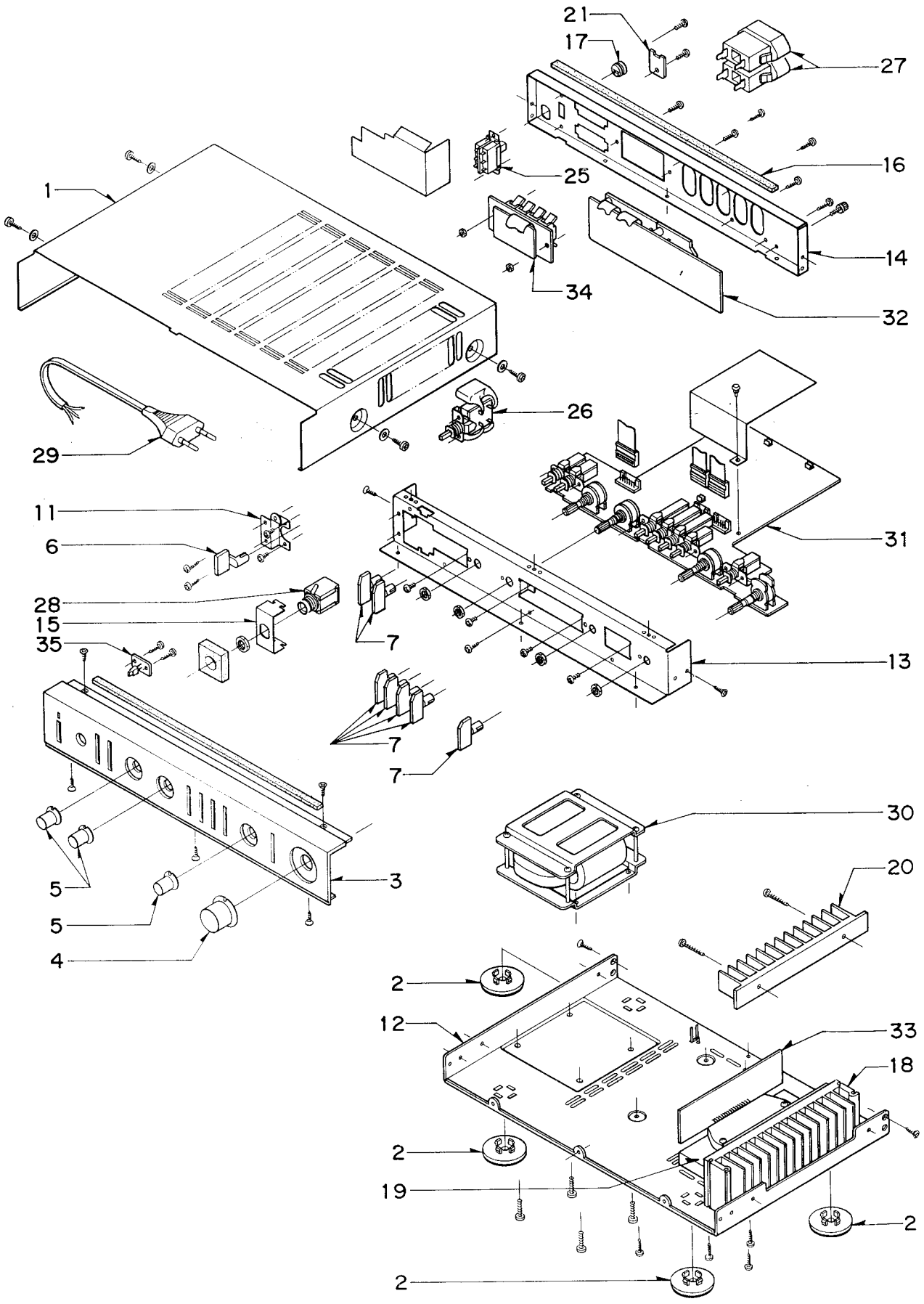
POWER AMP IC STK-461 EQUIVALENT CIRCUIT



TONE AMP IC NJM4558D EQUIVALENT CIRCUIT



CABINET & CHASSIS EXPLODED VIEW



PARTS LIST

PACKING PARTS LIST

Ref. No.	Parts Number	Description
	131 6 1139 85101	Box Corrugate-EXP
	131 6 1139 85201	Box Corrugate-EXP
	131 6 2119 02071	Bag Polyethylene-EXP
	131 6 3009 30930	Pad (Right, Left)
	131 6 3009 30940	Pad

ACCESSORIES PARTS LIST

Ref. No.	Parts Number	Description
	131 6 2719 10801	Bag Fan
	131 6 4119 84300	Explanatory Booklet
	131 6 4519 15700	Guarantee Certificate

CABINET PARTS LIST

Ref. No.	Parts Number	Description
1	131 2 1410 24700	Cover
2	131 0 1003 13800	Leg

APPEARANCE PARTS LIST

Ref. No.	Parts Number	Description
3	131 0 1016 36500	Panel Decorate Assy
4	131 0 1001 57400	Knob (Volume)
5	131 0 1001 57500	Knob (Bass, Treble, Balance)
6	131 2 1601 64200	Knob (Power Push)
7	131 2 1601 65200	Knob (Push)

CHASSIS PARTS LIST

Ref. No.		Parts Number	Description
11		131 2 3101 72900	Metal Mount (Power Switch)
12	*	131 2 3301 27100	Chassis
13	*	131 2 3305 29700	Panel Front
14	*	131 2 3306 32000	Panel Rear
15		131 2 3624 13500	Headphone Jack Mount
16		131 2 5205 15800	Cushion
17		131 2 6111 14200	Bushing
18		131 2 6201 28600	Plate Heat Sink
19		131 2 6201 28700	Plate Heat Sink
20		131 2 6201 28800	Plate Heat Sink
21		131 2 7104 00500	Plate Pad Switch

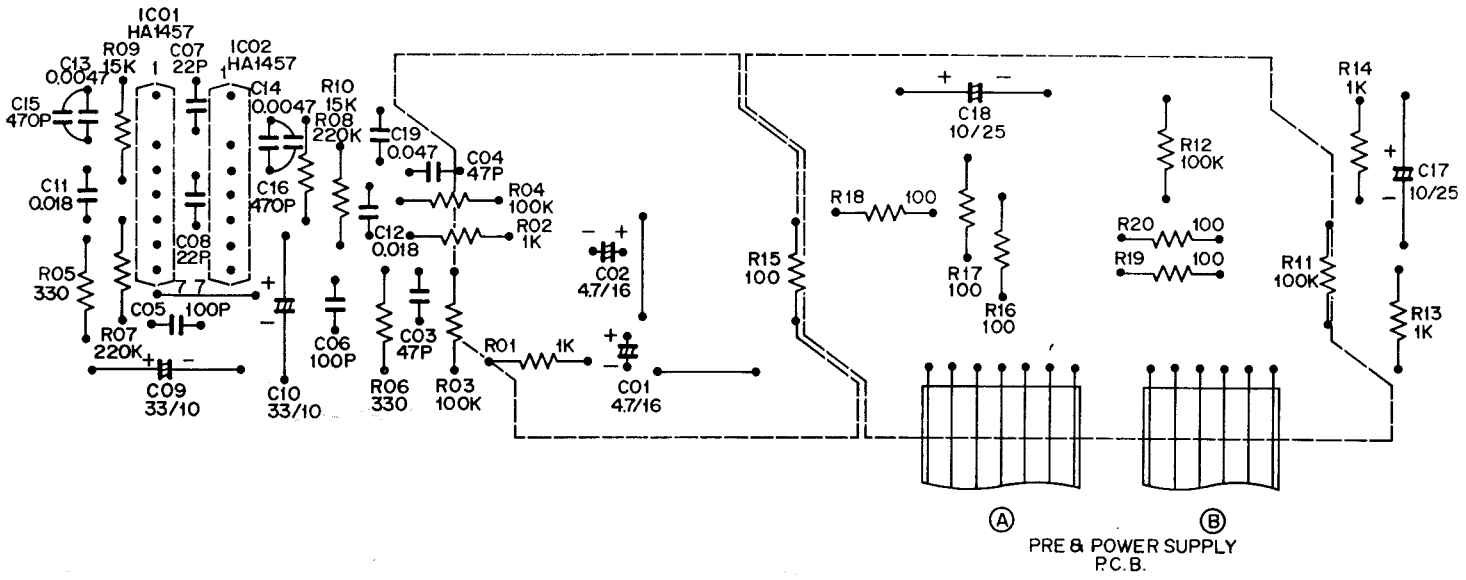
ELECTRICAL PARTS LIST

Ref. No.		Parts Number	Description
25		4 2312 01020	Switch Slide
26		4 2312 03560	Switch Push Power
27		4 2352 00450	AC Socket
28		4 2352 00740	Headphone Jack 3P
29		4 2432 00140	Power Cord
30		4 2512 12620	Power Transformer
31	*	131 0 4001 05300	Pre Amp & Power Supply P.C.B. Assy
32	*	131 0 4001 05310	EQ Amp P.C.B. Assy
33	*	131 0 4001 05320	Power Amp P.C.B. Assy
34	*	131 0 4001 05330	SP Terminal P.C.B. Assy
35	*	131 0 4001 05340	L.E.D. P.C.B. Assy
C01,02		C2EHRM103A	Metallized Paper 0.01 μF 250V ±20%

*—Not a service part.

EQ AMP P.C.BOARD

(BOTTOM VIEW)



IC PIN NUMBER VOLTAGES									
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8
IC01,02	HA1457	0V	–	0V	–18V	–16.6V	0V	0V	18.4V

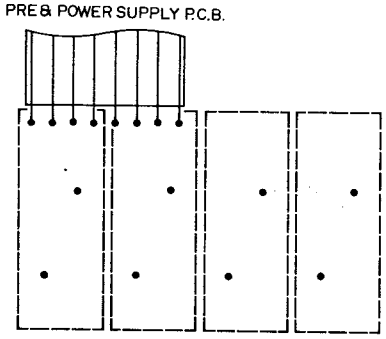
PARTS LIST

EQ AMP P.C.B. Assy
131 0 4001 05310

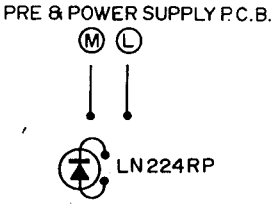
Ref. No.	Parts Number	Description
	4 2352 00380	Pin Jack 4P
	4 2352 00750	Jack 6P
	CAPACITORS	
C01,02	C1CTRK475A	Tantalum 4.7 μF 16V ±10%
C03,04	C1HCYK470APA	Ceramic 47 pF 50V ±10%
C05,06	C1HCYK101APA	Ceramic 100 pF 50V ±10%
C07,08	C1HCYK220APA	Ceramic 22 pF 50V ±10%
C09,10	C1ART-336A	Electrolytic 33 μF 10V
C11,12	C1HFRJ183A	Mylar 0.018 μF 50V ±5%
C13,14	C1HFRJ472A	Mylar 0.0047 μF 50V ±5%
C15,16	C1HCDK471SL	Ceramic 470 pF 50V ±10%
C17,18	C1ERT-106A	Electrolytic 10 μF 25V
C19	C1HYDZ473A	Ceramic 0.047 μF 50V +80,–20%

Ref. No.	Parts Number	Description			
	SEMICONDUCTORS				
IC01,02	IKK-HA1457	IC, HA1457			
	RESISTORS				
R01,02	R2EDZJ102APA	Carbon	1k	1/4W	±5%
R03,04	R2EDZJ104APA	Carbon	100k	1/4W	±5%
R05,06	R2EDSJ331A	Carbon	330	1/4W	±5%
R07,08	R2EDZJ224APA	Carbon	220k	1/4W	±5%
R09,10	R2EDZJ153APA	Carbon	15k	1/4W	±5%
R11,12	R2EDZJ104APA	Carbon	100k	1/4W	±5%
R13,14	R2EDZJ102APA	Carbon	1k	1/4W	±5%
R15,16	R2EDZJ101APA	Carbon	100	1/4W	±5%
17,18					
19,20					

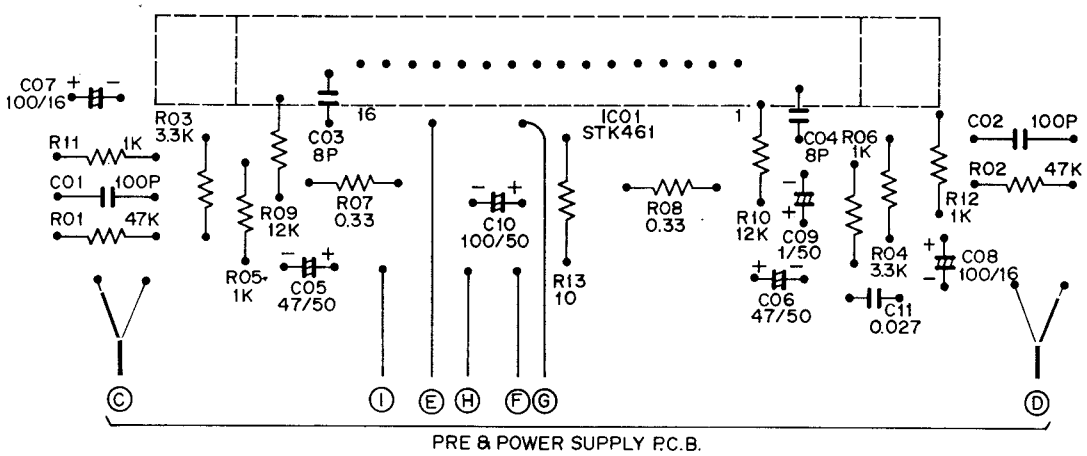
SP TERMINAL P.C.BOARD
(BOTTOM VIEW)



L.E.D. P.C.BOARD
(BOTTOM VIEW)



POWER AMP P.C.BOARD
(BOTTOM VIEW)



IC PIN NUMBER VOLTAGES																	
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC01	STK-461	0V	0V	0V	−1.5V	−32.7V	0V	0V	31.5V	32.7V	0V	0V	−33.7V	−1.5V	0V	0V	0V

PARTS LIST

POWER AMP P.C.B. Assy
131 0 4001 05320

Ref. No.	Parts Number	Description
	CAPACITORS	
C01,02	C1HCZJ101SPA	Ceramic 100 pF 50V ±5%
C03,04	C1HCYD080APA	Ceramic 8 pF 50V ±0.5%
C05,06	C1HRY-476APA	Electrolytic 47 μF 50V
C07,08	C1CRY-107APA	Electrolytic 100 μF 16V
C09	C1HRY-105APA	Electrolytic 1 μF 50V
C10	C1HRE-107A	Electrolytic 100 μF 50V
C11	C1HFYK273APA	Mylar 0.027 μF 50V ±10%
	SEMICONDUCTORS	
IC01	206 5 7340 46170	IC, STK-461SA
	RESISTORS	
R01,02	R2EDZJ473APA	Carbon 47k 1/4W ±5%
R03,04	R2EDZJ332APA	Carbon 3.3k 1/4W ±5%
R05,06	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R07,08	4 2212 00130	Metallized Paper 0.33 2W
R09,10	R2EDZJ123APA	Carbon 12k 1/4W ±5%
R11,12	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R13	R2HZPK100A	Fuse 10 1/2W ±10%

SP TERMINAL P.C.B. Assy
131 0 4001 05330

Ref. No.	Parts Number	Description
	4 2379 21560	Terminal 8P

L.E.D. P.C.B. Assy
131 0 4001 05340

Ref. No.	Parts Number	Description
	SEMICONDUCTORS	
	DWW-LN224RP	LN224RP (L.E.D.)

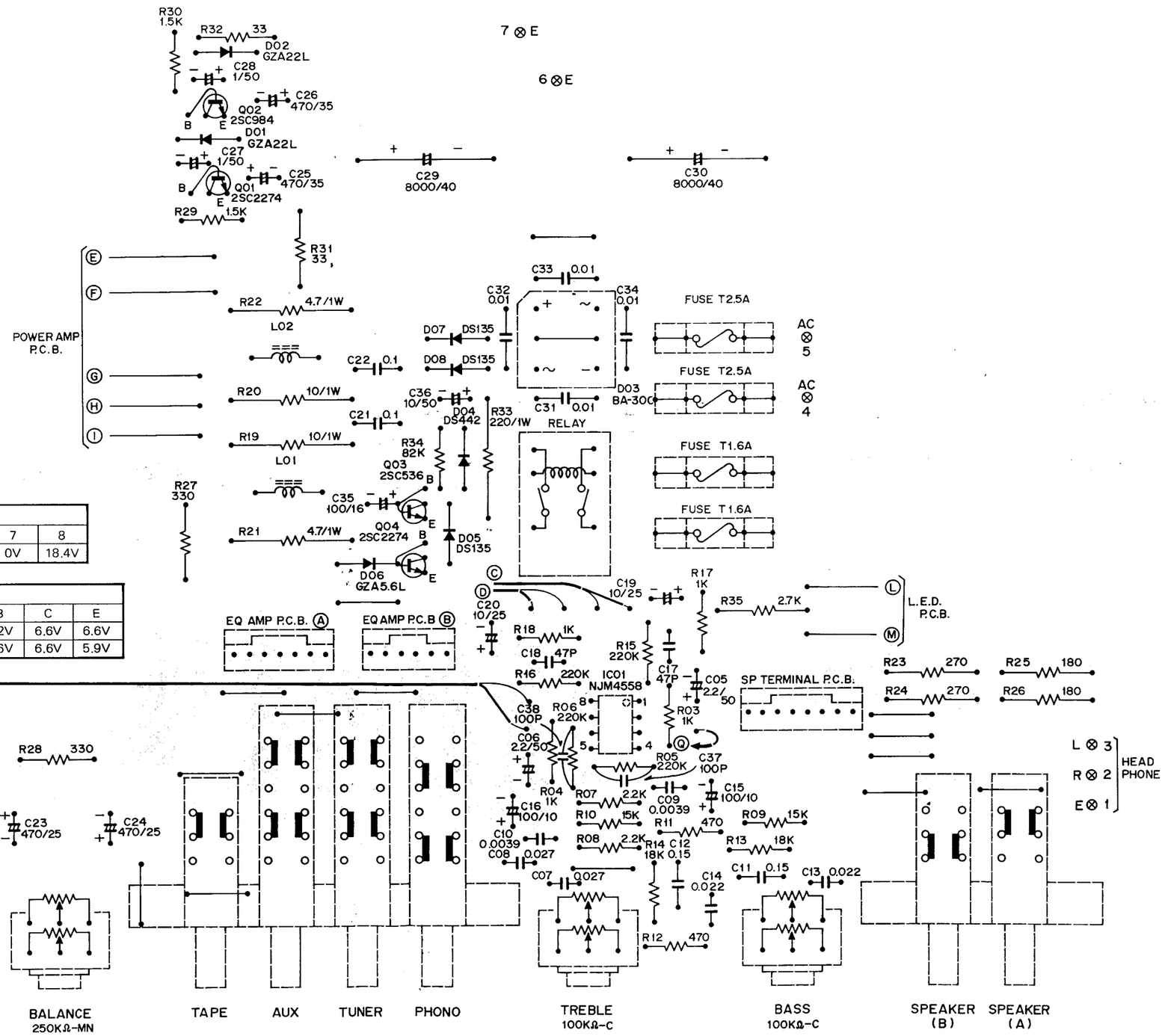
PRE AMP & POWER SUPPLY P.C.B. Assy
131 0 4001 05300

Ref. No.	Parts Number	Description
	4 2312 04480	Switch Push 4 key
	4 2312 04490	Switch Push 2 key
	4 2312 04500	Switch Push 1 key
	4 2322 00160	Relay
	4 2349 20240	Fuse 1.6 A
	4 2349 20570	Fuse 2.5 A
L01,02	4 2532 00180	RF Filter
VR01	4 2229 25380	VR 250k-MN (Balance)
VR02	4 2222 01760	VR 100k-Bx2 (Master VR)
VR03,04	4 2222 00370	VR 100k-Cx2 (Bass, Treble)
	CAPACITORS	
C01,02	C1HCZK391BPA	Ceramic 390 pF 50V ±10%
C03,04	C1HFYK223APA	Mylar 0.022 μF 50V ±10%
C05,06	C1HRY-225LPA	Electrolytic 2.2 μF 50V
C07,08	C1HFYK273APA	Mylar 0.027 μF 50V ±10%
C09,10	C1HFYK392APA	Mylar 0.0039 μF 50V ±10%
C11,12	C1HFAJ154A	Mylar 0.15 μF 50V ±5%
C13,14	C1HFYK223APA	Mylar 0.022 μF 50V ±10%
C15,16	C1ARY-107APA	Electrolytic 100 μF 10V
C17,18	C1HCYK470APA	Ceramic 47 pF 50V ±10%
C19,20	C1ERY-106LPA	Electrolytic 10 μF 25V
C21,22	C1HFAK104A	Mylar 0.1 μF 50V ±10%
C23,24	C1ERF-477A	Electrolytic 470 μF 25WV
C25,26	C1VRE-477A	Electrolytic 470 μF 35V
C27,28	C1HRY-105APA	Electrolytic 1 μF 50V
C29,30	4 2232 00470	Electrolytic 8000 μF 40V
C31,32	C2HYSP103A	Ceramic 0.01 μF 500V +100,–0%
33,34		
C35	C1CRY-107APA	Electrolytic 100 μF 16V
C36	C1HRY-105APA	Electrolytic 1 μF 50V
C37,38	C1HCDK101SL	Ceramic 100 pF 50V ±10%

Ref. No.	Parts Number	Description
	SEMICONDUCTORS	
D01,02	202 5 3210 22010	Diode, GZA22 L, U
D03	202 5 2620 03010	Bridge Diode, BA-30C
D04	205 5 9040 44210	Diode, DS-442
D05	202 5 2470 13540	Diode, DS-135
D06	202 5 3210 05610	Diode, GZA5.6 L, U
D07,08	202 5 2470 13540	Diode, DS-135
IC01	IJJ-NJM4558DX	IC, NJM4558D
Q01	203 5 7252 27450	TR 2SC2274 E, F
Q02	203 5 6820 98450	TR 2SA984 E, F
Q03	203 5 5000 53660	TR 2SC536 F, G
Q04	203 5 7252 27450	TR 2SC2274 E, F
	RESISTORS	
R01,02	R2EDZJ153APA	Carbon 15k 1/4W ±5%
R03,04	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R05,06	R2EDZJ224APA	Carbon 220k 1/4W ±5%
R07,08	R2EDZJ222APA	Carbon 2.2k 1/4W ±5%
R09,10	R2EDZJ153APA	Carbon 15k 1/4W ±5%
R11,12	R2EDZJ471APA	Carbon 470 1/4W ±5%
R13,14	R2EDZJ183APA	Carbon 18k 1/4W ±5%
R15,16	R2EDZJ224APA	Carbon 220k 1/4W ±5%
R17,18	R2EDZJ102APA	Carbon 1k 1/4W ±5%
R19,20	R3AXBJ100A	Oxide Metal Film 10 1W ±5%
R21,22	R3AXBJ4R7A	Oxide Metal Film 4.7 1W ±5%
R23,24	R2HCPK271A	Solid 270 1/2W ±10%
R25,26	R2HCPK181A	Solid 180 1/2W ±10%
R27,28	R2HZPK331A	Fuse 330 1/2W ±10%
R29,30	R2EDZJ152APA	Carbon 1.5k 1/4W ±5%
R31,32	R2HZPK330A	Fuse 33 1/2W ±10%
R33	R3AXBJ221A	Oxide Metal Film 220 1W ±5%
R34	R2EDZJ823APA	Carbon 82k 1/4W ±5%
R35	R2HCPK272A	Solid 2.7k 1/2W ±10%

PRE AMP & POWER SUPPLY P.C.BOARD

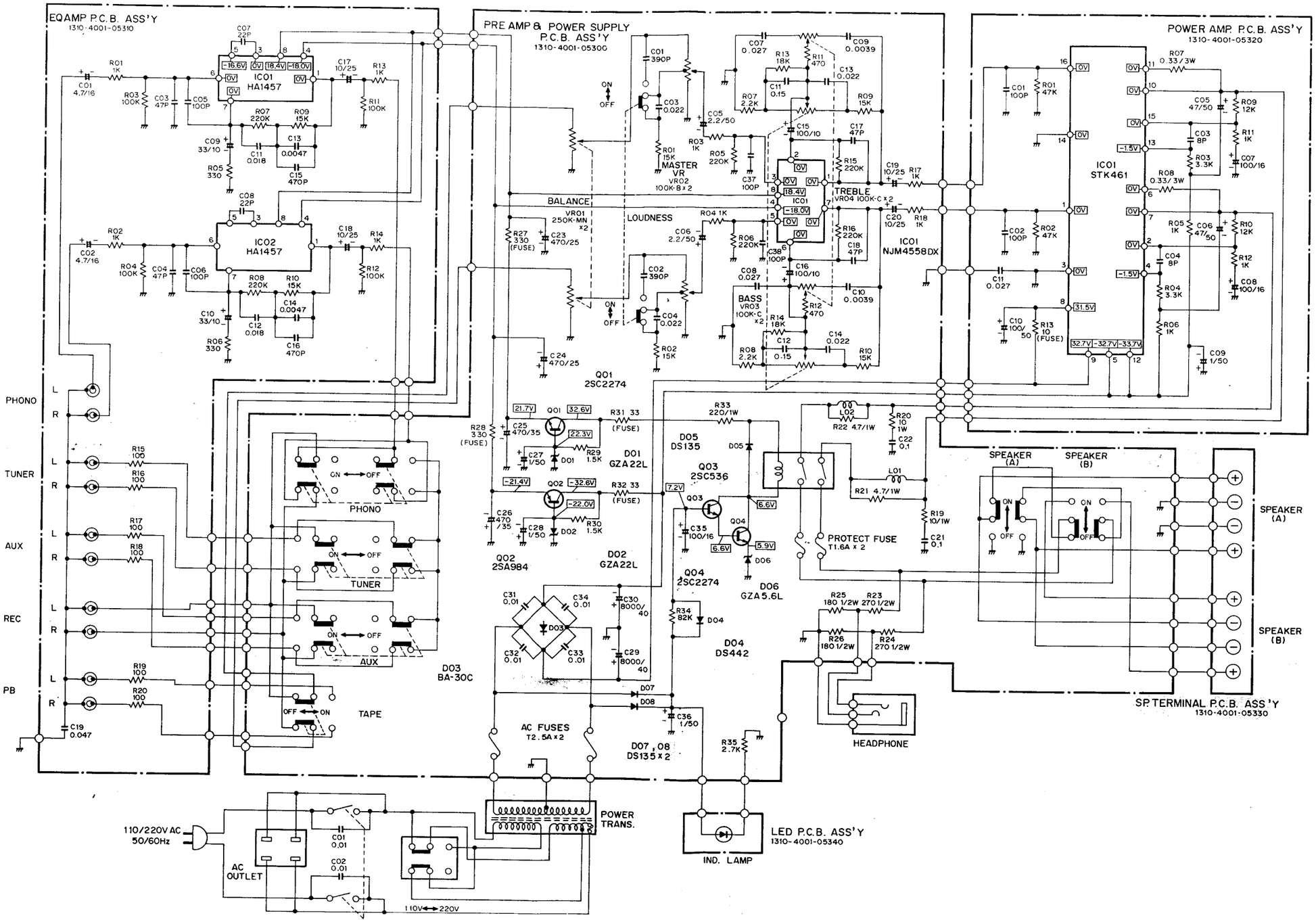
(BOTTOM VIEW)



IC PIN NUMBER VOLTAGES									
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8
IC01	NJM4558	0V	0V	0V	−18V	0V	0V	0V	18.4V

TRANSISTORS VOLTAGES									
SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q01	2SC2274	22.3V	32.6V	21.7V	Q03	2SC536	7.2V	6.6V	6.6V
Q02	2SA984	−22.0V	−32.6V	−21.4V	Q04	2SC2274	6.6V	6.6V	5.9V

SCHEMATIC DIAGRAM



NOTES:

1. All resistors values are indicated in "ohm" (K=10^3, M=10^6).
2. All capacitors values are indicated in "μF" (P=10^{-12}).
3. All voltages indicated on the schematics are measured under the following conditions.
   a. Use a V.T.V.M.
   b. All voltages ±10% with respect to chassis ground
   c. No signals at input terminals
   d. AC input at 220 volts 50Hz
4. This is a basic schematic diagram.

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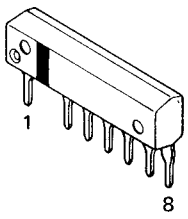
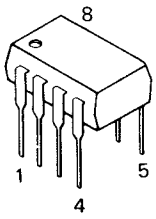
SEMICONDUCTOR LEAD IDENTIFICATION

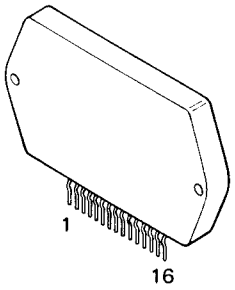
INTEGRATED CIRCUITS



- HA1457

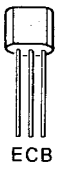


- NJM4558



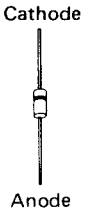
- STK-461

TRANSISTORS

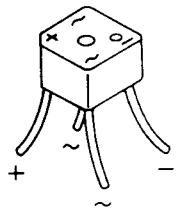


- 2SC2274
- 2SA984
- 2SC536

DIODES



- GZA22
- DS-442
- DS-135
- GZA5.6



- BA-30C